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Mr. Saddington's Machine for covering Wire

Pl. 5.

Fig. 7.

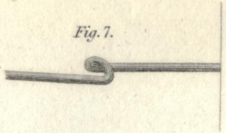


Fig. 2.

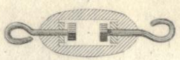


Fig. 1.

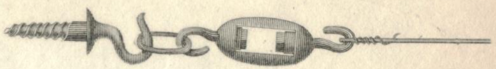


Fig. 5.

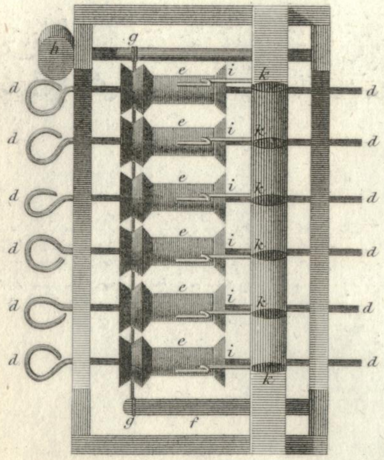


Fig. 6.

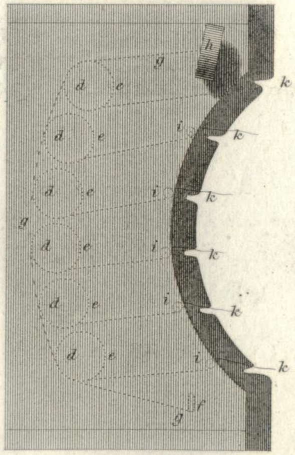


Fig. 4.

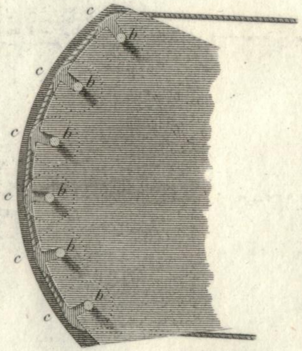
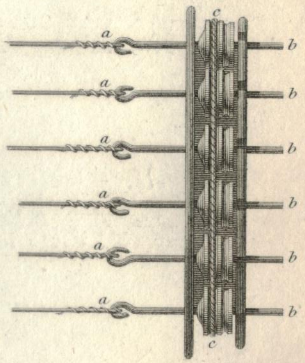


Fig. 3.

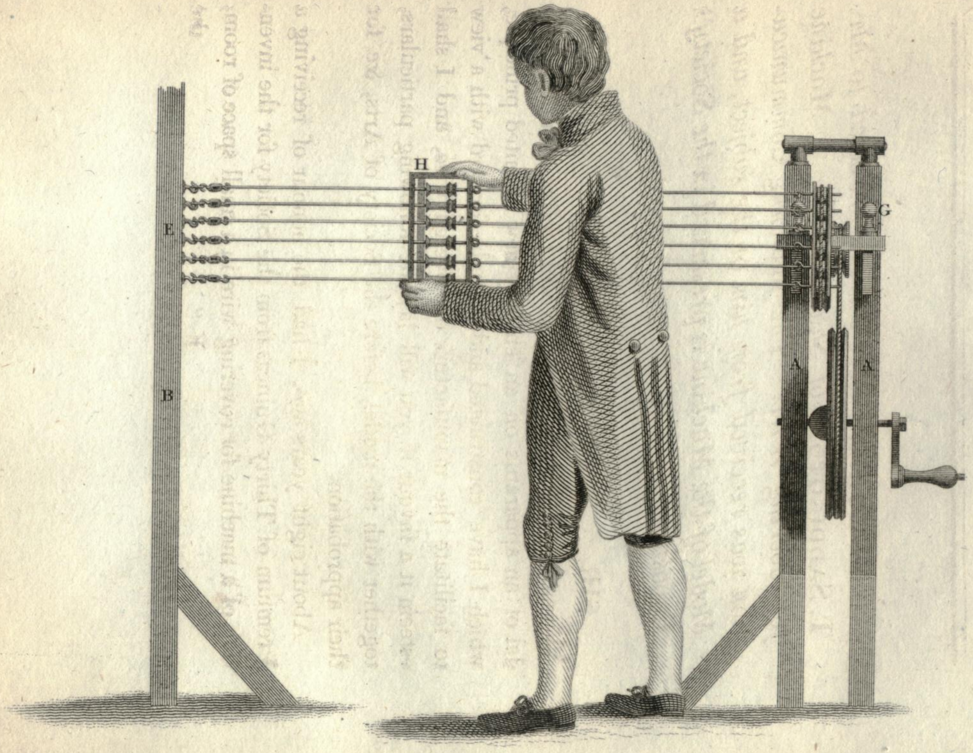


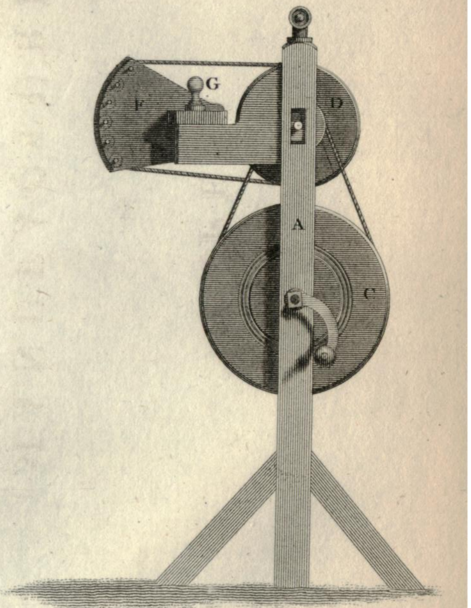
Drawn by W. Newton.

Engraved by James Davis.

Mr. Saddington's Machine for covering Wire.

Pl. 6.





Drawn by W. Newton.

Engraved by James Davis.

PAPERS

IN

MANUFACTURES.

FIFTEEN GUINEAS *were this Session voted to Mr.* T. SADDINGTON, *of Shadwell, for a Machine for covering Wire. The following Communication was received from him on the subject, and a Model of the Machine is preserved in the Society's Repository.*

SIR,

WITH this communication you will receive a working model of an apparatus on an entirely new invented principle, which I have constructed and brought forward with a view to facilitate the manufacture of covered wire, and I shall esteem it a favour if you will lay the following particulars, together with the model, before the Society of Arts, &c. for their approbation.

About eight years ago, I had the honour of receiving a Premium of Thirty Guineas from the Society for the invention of a machine for covering wire in a small space of room, the particulars of which are contained in the Twenty-seventh Volume of the Society's Transactions.

The present invention is an improvement on the mode of covering wire in long shops or sheds, as practised by all manufacturers who have the conveniency of such premises. The long shop covering or spinning, as it is generally termed, is by doing one length of wire at a time, yet it is the most expeditious manner of covering of any in practice, and notwithstanding the velocity with which the wire is turned round, the process of covering is very tedious, the revolutions of silk or cotton round the wire being from forty to one hundred and twenty in every inch, according to the fineness and purposes for which it is wanted. But, perhaps, the average may be fairly taken on the sizes of what is mostly used, at sixty revolutions for every inch of wire, so that each separate length of wire would have to perform 43,200 revolutions in a shed of only twenty yards long, and supposing the wire to be impelled round with a velocity to make fifty revolutions in every second of time, it would require more than fourteen minutes to cover a space of twenty yards in length.

By the present invention, six wires are all covered at one time, by which improvement, a saving is gained of five-sixths of the time occupied in the act of covering, or what may be expressed more plainly, fifty minutes are gained out of every hour so employed.

The upright posts, A, plate 5, of the machine, with the multiplying wheel, are fixed to the floor at one end of the shop, and B, at the extremity of the other end. To A, is attached an arm and fan, F, containing six grooved hooks placed in the form of a segment of a circle, which are carried round by the multiplying wheel, D; the band is adjusted

justed by the screw, G, which secures the fan to the arm. The axle of the wheel D, is supported on false beds, which may be raised by small wedges to tighten the band, as occasion requires. The six brass swivels at E, are fixed to the post, B, or to a board on the wall at the opposite end of the shop, and are placed in the same form as the hooks. The small portable box, H, contains the bobbins of silk for covering the wire, which are also placed in the same form as the hooks; they have a groove in each, in order to keep them steady and of a proper tension by means of a string of catgut passed over them, and wound round a peg; in front of the box are notches for the wires to work in, and to keep them steady while covering.

As I am not myself in any respect engaged or interested in the article of covered wire, I have shown my new plan to the following persons, who are most respectable manufacturers, consequently competent judges of the merits of my invention, and who have favoured me with their testimonies of approbation, which you will herewith receive enclosed.

I remain, Sir,

Respectfully your's,

THOMAS SADDINGTON.

No. 24, Shakespeare Walk, Shadwell,
March 26th, 1817.

CERTIFICATES.

SIR,

I HAVE attentively observed the method of covering wire by Mr. SADDINGTON's new invention, and take the liberty of stating, that it is quite new to me, as the usual method is only to cover one wire at a time, and that by the hand, which is not likely to be so regular. I have been in the trade more than twenty years, and have never till this seen a similar method, or any thing approaching to it.

I remain, Sir,
Your obedient Servant,
W. Farmer.

11, Bread-Street, March, 1817.

To A. Aikin, Esq. Sec.

Sir,

I have particularly inspected Mr. **Saddington**'s new invented machine for covering wire, and I hereby testify my approbation of it, considering it an original in covering six wires at a time, the usual mode being by covering them singly

I remain, Sir,
Your humble Servant,
H. R. Fanshawe.

Addle-Street, Aldermanbury, March 8th, 1817.

To. A. Aikin, Esq. Sec.

Sir,

Having inspected Mr. Saddington's improved plan of covering wire on the principle of what is generally termed long shop spinning, I hereby testify my approbation of it, as it is the first of the kind that I have either seen or heard of.

of. The common mode of covering wire is by doing only one length of it of going down the shop each time, consequently a great deal of time is saved by his contrivance of confining the bobbins of silk in a box so as to cover several lengths of wire in the same space of time as is required to cover one in the usual way.

I remain, Sir,
Your obedient Servant,
W. WITHALL.

No. 5, Featherstone-street, Finsbury-Square.

To A. AIKIN, Esq. SEC.

SIR,

I HAVE seen Mr. SADDINGTON's new invented machine for covering wire, and I hereby approve of his plan, as it will cover several wires at once, instead of the common way of doing one at a time, which certainly is a great saving.

I remain,
Your obedient Servant,
RICHARD DAVIES.

No. 8, George-street, Fetter-Lane.

To A. AIKIN, Esq. SEC.

Reference to the Engraving of Mr. SADDINGTON's *Machine for covering Wire, Plates 5 and 6.*

Plate 6. fig. 1, a view of the swivels (E, pl. 5.)

Fig. 2, a section of the same.

Figs. 3

Figs. 3 and 4, a side and front view of the fan (F, pl. 5.)

a b, the hooks.

c c, the small wheels, with the band passing over them, by which the hooks are made to revolve.

5 and 6, a front and side view of the box, (H, pl. 5.)

d d, the spindles.

e e, the bobbins containing the silk.

f, the spring of whalebone; *g g*, the band of catgut; and *h*, the peg, by means of which an equal degree of tension is given to the bobbins.

i i, loops of wire (shewn more clearly by fig. 7,) through which the silk from the bobbins passes, and by means of which, and the notches, *k k*, the threads are kept in their proper places.

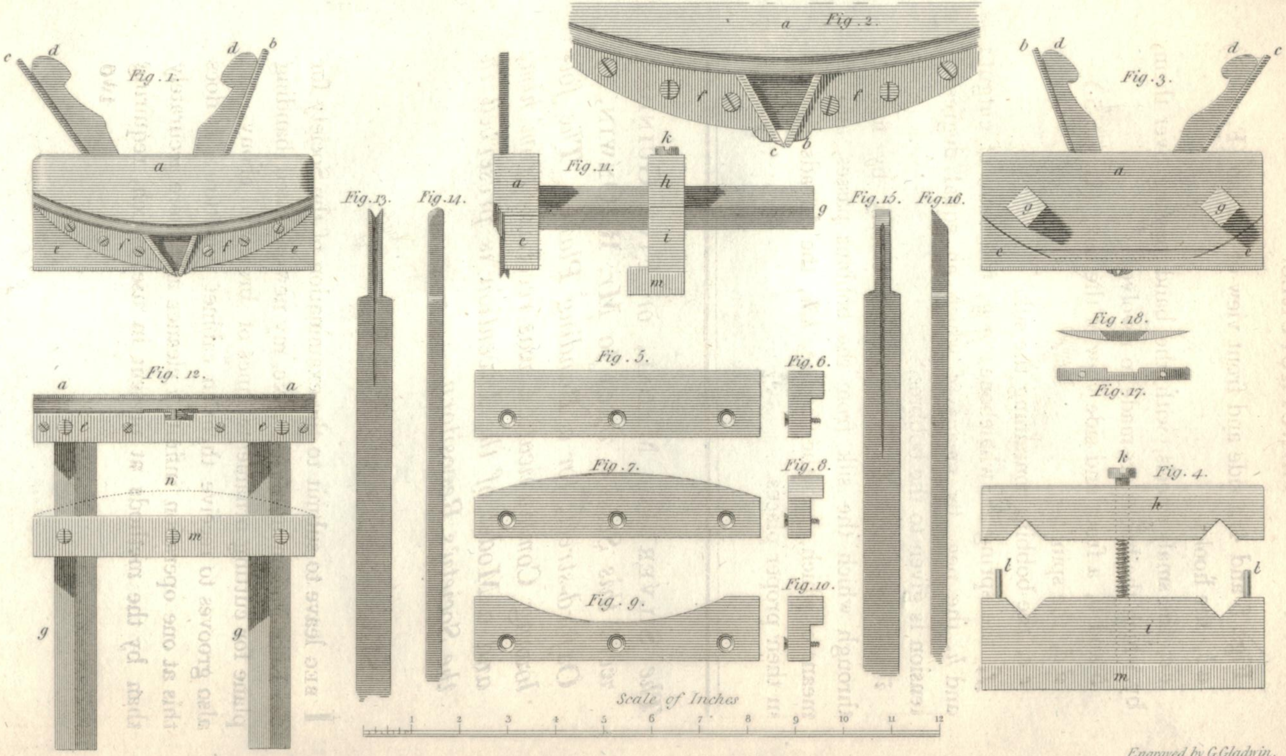
The SILVER ISIS MEDAL, *or* FIVE GUINEAS, *were this Session voted to Mr.* R. ONWIN, *of Oxford-street, for a Banding Plane. The following Communication was received from him, and a Model of the Invention is preserved in the Society's Repository.*

SIR,

I BEG leave to submit to the examination of the Society for the Encouragement of Arts, &c. my new-invented banding plane for cutting ornamental lines of brass and ebony, and also grooves to receive them in cabinet furniture: It does this at one operation infinitely cleaner and more accurately than by the methods at present in use, which, requiring two

Pl. 7.

Mr. Onwin's, Banding Plane.



Drawn by W. Newton.

Engraved by G. Gladwin.

two operations, take the workman as long to groove a foot as ten feet may be done, better by my plane.

A great disadvantage of the present method is, that in the cutting gauge the cutters, being necessarily thicker in the middle and upper parts, bruise and widen the upper edges of the groove, so that the glue shews in such places, and the workman is frequently at great trouble in concealing such defects. But with my plane, as fast as the cutters pierce the wood, the router follows close after, and clears the wood out of the groove; the outer sides of the cutters being parallel, the edge of the grooves remain unbruised, and exactly at equal distances, and the same tool cutting the line, it must always fit close at the sides.

In the old way of routing the wood the grooves are torn and uneven at the bottom, through which irregularities as the glue dries the line is drawn down in places. By my plane the bottoms of the grooves are smooth, even, and of a regular depth; of course the glue holding the line in all parts alike, it ties more secure from starting out than hitherto.

By the movable fences making four changes, it works curves of every kind with an ease and steadiness which has obtained it the approbation of all cabinet-makers who have tried or seen it, and by whom I have been encouraged to submit it to the Society.

I am, Sir,
Your most humble Servant,
RICHARD ONWIN.

Oxford-street, April, 1817.

To A. Aikin, Esq. Sec.

Reference

Reference to the Engraving of Mr. ONWIN'S *Banding Plane, Plate* 7.

Fig. 1, *a,* the wooden frame through which the cutter *b,* and the chizel called the router, *c,* pass.

d d, wedges of wood by which the cutter and router are fixed at any given degree of projection beyond the flat piece, *e e,* according to the depth of the groove intended to be cut.

f f, cheeks of steel firmly screwed to the frame, in order to support the pressure, and to steady the motion of the instrument.

Fig. 2, shews, on a large scale, the steel cheeks, *f f,* the cutter *b,* and the router, *c;* the flat piece, *e e,* being removed.

Fig. 3, shews the opposite side of the instrument, from which project two legs, *g g,* on which the director traverses.

Fig. 4, the director, consisting of three pieces of wood, two of which, *h, i,* are capable of being fastened together by the screw, *k,* and the two pegs, *l, l,* and hence will slide easily on the legs, or may be firmly fixed to them, at the pleasure of the workman. The fence, *m,* is fixed by screws to the piece *i,* and, according to the form given to its own edge, determines that of the groove made by the cutter.

Figs. 5, 6, 7, 8, 9, 10, front and side views of different varieties of the fence, *m,* according as the groove required to be cut is straight, or curved externally or internally.

Fig. 11, is a lateral view of the plane. The fence, *m,* is is of the same form as that represented at figs. 5 and 6, and is employed when a straight groove is required to be cut.

Fig. 12, is a view of the under side of the plane; the dotted line, *n*, represents the edge of the fence 7 and 8, which is employed when a groove externally covered is required to be cut.

Figs. 13, 14, a front and side view of the cutter.

Figs. 15, 16, ditto of the chizel, called the router.

Figs. 17, 18, a view and section of a piece of steel to be screwed on instead of *e*, *e*.